

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

REMARKS

In view of the following remarks, the Examiner is requested to allow Claims 1-33 and 49 to 53, the only claims pending and under examination in this application.

Withdrawn Rejections

The Applicants thank the Examiner for withdrawing the following rejections:

Claims 1-33 under 35 U.S.C. §112, second paragraph, as being indefinite.

Claims 1-33 under 35 U.S.C. §103(a) as being unpatentable over Tisone et al., Hackleman, Anderson, and Schultz et al.

New Rejection Under 35 U.S.C. §112

The Examiner has rejected Claims 1-33 and 49-53 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner asserts that the Applicant's previous amendment necessitated the new grounds of rejection.

The Examiner states that independent claim 1 has been amended to state the limitation "wherein the non-error second dispenser dispenses drop only where the identified error first dispenser did not dispense drops in the pattern for the selected path" and that the other independent claims include similar language and the same reasons for the instant rejection apply to all of the independent claims.

The Examiner asserts that the claim language noted above is indefinite because it can be construed in multiple different ways. Specifically the Examiner sets forth the following asserted interpretations.

1. The claim limitation could be construed to mean that the non-error second dispenser does not dispense any drops at all, except "only where" the identified error first dispenser should have, but did not, dispense drops in the said selected path. In other words, the first and second dispensers of a set can only deposit drops in the same locations. If a first dispenser of a set is found to be in error, a non-error second dispenser of the same set, can only dispense where first dispenser failed to cover, and not in a separate location or pattern.

2. The claim limitation could be construed to mean that non-error second dispenser dispenses drops only in those locations on the substrate in the selected path where the identified error first dispenser did not dispense drops in the pattern for said selected path of the first group. The Examiner

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

asserts that this limitation encompasses the dispensing of drops by the non-error second dispenser that avoid any droplets resulting from a "soft nozzle failure" that resulted in a solution break up into multiple smaller drop during firing of the identified error first dispenser (citing the Invention Disclosure provided in the Declaration by all of the instant inventors, entered 3/25/2005).

In response, the Applicants submit that the second interpretation above contradicts other explicit limitations of the claims, and thus is not an "alternative" interpretation as asserted by the Examiner.

Specifically, the dispensing operation of independent claims 1, 6, 25, and 52 all include the following:

1. identifying error-dispensers (either "hard" or "soft" error dispensers);
2. depositing drops from non-error dispensers in the selected pattern; and
3. moving a second, redundant dispenser along the selected path while dispensing drops from a non-error second dispenser only where the identified error first dispenser did not dispense drops in the pattern for the selected path.

As is clear from above, identified error-dispensers are actively excluded from dispensing drops anywhere in the selected pattern (i.e., only non-error dispensers are used for this purpose). Therefore, it does not matter whether an error dispenser is a "hard" or "soft" error dispenser because, regardless of the reason a dispenser is identified as an error dispenser, it is simply not used in the dispensing steps. In other words, the non-error dispensers do not dispense at all (consistent with the first interpretation of the Examiner above).

Therefore, because the claims cannot be interpreted in the multiple different ways described by the Examiner, the Applicants contend that they are definite. Withdrawal of this rejection is thus respectfully requested.

The Examiner has rejected Claims 1-33 and 49-53 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement, asserting that the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that this rejection is for new matter and that the Applicant's amendment necessitates the new grounds of rejection.

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

In making this rejection, the Examiner asserts, as detailed above, that the claims now encompass methods in which a non-error second dispenser dispenses drops that avoid any droplets resulting from a "soft nozzle failure" that resulted in a solution break up into multiple smaller drops during firing of the identified error first dispenser. The Examiner asserts that this species is not described in the specification as filed.

As detailed above, the Applicants submit that this "alternative" interpretation of the claims is internally contradictory with other clear and unambiguous elements of the claims. Specifically, the claims clearly and unambiguously state that the error dispensers are not used at all to dispense drops in the selected pattern: only non-error dispensers do so. Therefore, the Applicants submit that the Examiner's "alternative" interpretation of what the claims encompass simply ignores explicit limitations therein.

Therefore, in view of the fact that the Examiner's "alternative" interpretation of the claimed invention is internally contradictory with clear and unambiguous claim limitations, the Applicants submit that the claims do not encompass the asserted "new matter". Withdrawal of this rejection is thus respectfully requested.

Maintained Rejection Under 35 U.S.C. §102

The Examiner has maintained the rejection of Claims 1-33 and 52 under 35 USC § 102(b) as being anticipated by Kumar et al. (US 6,283,572).

As stated in *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

The presently claimed invention is drawn to methods for fabricating an array. Because the specifics of the claimed methods have been described in great detail in previous responses, the Applicants will not reiterate them here (see, e.g., the previous response).

The independent Claim 1 of the present application includes the limitation that "the non-error second dispenser dispenses drops only where the identified error first dispenser did not dispense drops in the pattern for the selected path" (step *d*; independent Claims 6, 25 and 52 include similar limitations). In other words, the redundant non-error dispensers of a set do not deposit drops in any location other than where an error dispenser in the same set does not deposit a drop.

The Applicants submit that that the "non-error" dispensers of Kumar et al. are not employed

Atty Dkt. No.: 10010464-1
 USSN: 10/061,800

as is claimed in the subject application. Specifically, the "non-error" dispensers of Kumar et al. deposit drops in locations other than where an identified error dispenser did not deposit a drop.

However, in maintaining this rejection, the Examiner states that:

Applicant's arguments, entered 5/29/2007, have been fully considered but they are not persuasive. Kumar et al., at Tables I and II teach deposition by redundant dispensers (nozzles 2, 50 and 98 of Table II) that dispense only where (i.e., Row 2) the defective dispenser (nozzle 146) should have, but did not.

The Applicants respectfully disagree with the Examiner's characterization of Kumar et al. Indeed, the Applicants submit that Tables I and II Kumar et al. explicitly show that "non-error" dispensers are used therein to dispense drops both at locations where identified error dispensers did not and at locations other than where identified error dispensers did not. Table II of Kumar et al., which shows a "modified printmask" (i.e., where an error dispenser is identified), and its description is reproduced below.

TABLE II

MODIFIED PRINTMASK

| Row Number On the Printed Media | Pass Number in Which the First 12 Columns in the Row Are Printed | Nozzle Number Used to Print in Passes 1 Through 4 for the Identified Row | | | |
|--|---|--|--------|--------|-------------|
| | | Pass 1 | Pass 2 | Pass 3 | Pass 4 |
| Row 1 | 123412341234 | 1 | 49 | 97 | 145 |
| Row 2 | 232123212321 | 2 | 50 | 98 | Not Used |
| Row 3 | 341234123412 | 3 | 51 | 99 | 147 |
| Row 4 | 412341234123 | 4 | 52 | 100 | 148 |
| * * * | * * * | * * * | * * * | * * * | * * * |
| Row 48 | * * * | 48 | 96 | 144 | 192 |

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

Assume that nozzle 146 is determined to be malfunctioning from the pen health measurement system. From column 6 of TABLE I it can be seen that nozzle 146 is used to print row 2 on pass number 4. It can also be seen from columns 3-5 that nozzles 2, 50, and 98 are also used to print row 2, but on passes 1, 2 and 3, respectively. Accordingly, either nozzles 2, 50, or 98 could be used to replace using nozzle 146 on pass 4 by using either nozzles 2, 50, or 98 on passes 1, 2, or 3, respectively. Likewise, the same procedure can be used for any other of the 192 nozzles which are shown to be malfunctioning from the pen health measurement system. Since, there would be three substitute nozzle choices in a four-pass printmode, the likelihood of finding a functional nozzle replacement is almost certain. If possible, it would be best to select a functioning nozzle that is not in an adjacent pass to keep the nozzle firing frequency to a minimum. Using this criteria in this example, nozzle 50 in pass 2 would be used to replace nozzle 146, rather than nozzles 98 or 2 which are in adjacent passes 3 and 1, respectively. Thus, the TABLE I printmask would be changed as shown in TABLE II to eliminate the need for printing with nozzle 146.

The Applicants submit that Table II and its description clearly state that "non-error" dispensers dispense drops both at locations where identified error dispensers did not (i.e., where "error" dispenser 146 did not) and at locations other than where identified error dispensers did not. Specifically, Table II shows that dispenser 50 dispenses drops in its "normal locations" (i.e., in columns 1, 5 and 9 during Pass 2: unbolded 2s in Row 2, boxed above for emphasis) as well as where "error" dispenser 146 will not (i.e., in columns 3, 7 and 11 during Pass 2: bolded 2s in Row 2)

Therefore, in contrast to the Examiner's assertion, the "non-error" dispensers employed in Kumar et al. deposit drops in locations other than where an error dispenser did not deposit a drop, in contrast to the claims of the subject application.

Because Kumar et al. fails to teach each and every element of the claims, the Applicants submit that it fails to anticipate them. Withdrawal of this rejection is thus respectfully requested.

New Rejection Under 35 U.S.C. §103

The Examiner has rejected Claims 1-33 and 49-53 under 35 U.S.C. §103(a) as being unpatentable over Kumar et al., US 6,283,572, (914101: 3/4/97; of record, IDS entered 10/31/2006), and in view of MacBeath, "Printing Proteins as Microarrays for High-Throughput Function Determination," Science, New Series, col. 289, No. 5485 (Sep. 8, 2000), pp. 1760-1 763.

In order to meet its burden in establishing a rejection under 35 U.S.C. § 103, the Office must first demonstrate that the combined prior art references teach or suggest all the claimed limitations.

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

See *Pharmastem Therapeutics v. Viacell et al.*, 2007 U.S. App. LEXIS 16245 (Fed. Cir. 2007) ("the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make [every element of] the composition or device, or carry out the [entire] claimed process, and would have had a reasonable expectation of success in doing so," (citing *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007))); and see *Omegaflex, Inc. v. Parker-Hannifin Corp.*, 2007 U.S. App. LEXIS 14308 (Fed. Cir. 2007) ("[t]he Supreme Court recently explained that 'a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art,'" (citing *KSR Int'l Co. v. Teleflex Inc.* at 1741)); and see *Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006) ("[once] all claim limitations are found in a number of prior art references, the factfinder must determine '[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references,'" (citing *In re Fulton*, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004))).

In making this rejection, the Examiner asserts that Kumar et al. teach all elements of the claims except methods comprising fabricating an array that is a biopolymeric array (as in claims 49-51 and 53).

To remedy this deficiency, the Examiner cites MacBeath, "Printing Proteins as Microarrays for High-Throughput Function Determination," *Science*, New Series, col. 289, No. 5485 (Sep. 8, 2000), pp. 1760-1 763, asserting that throughout the publication (e.g., p. 1760, right-hand column), this reference teaches using contact printing to fabricate protein arrays.

As discussed above, the Applicants submit that Kumar et al. fails at least to teach the claim limitation that "the non-error second dispenser dispenses drops only where the identified error first dispenser did not dispense drops in the pattern for the selected path" (from Claim 1; see also step *d* of independent Claims 6, 25 and 52 which include similar limitations).

The Applicants further submit that Kumar et al. fail to suggest such a limitation because to modify the teachings of Kumar et al. to comport with this limitation of the claimed invention would render it unsuitable for its intended purpose. For example, referring back to Table II (reproduced above), to require that "non-error" dispenser 50 only dispense drops where "error" dispenser 146 does not would result in dispenser 50 failing to deposit drops in its "normal locations" (i.e., in columns 1, 5 and 9 during Pass 2: unbolded 2s in Row 2). Failure to deposit at such "normal locations" would result in a printed product that is missing deposited drops where drops should be: precisely the opposite result that Kumar et al. is trying to achieve. It is established law that if a proposed modification to renders the teachings of a prior art reference unsatisfactory for its intended

Atty Dkt. No.: 10010464-1
USSN: 10/061,800

purpose, then there is no suggestion or motivation to make the proposed modification (see *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

As MacBeath is cited merely for its asserted teaching of print-fabrication of biopolymeric arrays, it fails to remedy the deficiencies in the teachings in Kumar et al.

Therefore, because the combined teachings of Kumar et al. and MacBeath fail to teach or suggest each and every element of the claimed invention, the Applicants submit that a *prima facie* case of obviousness has not been established. As such, the Applicants respectfully request that this rejection be withdrawn.

Atty Dkt. No.: 10010464-1

USSN: 10/00000000

RECEIVED
CENTRAL FAX CENTER

OCT 09 2007

CONCLUSION

In view of the amendments and remarks above, the Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Bret Field at (650) 833-7770. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078, order number 10010464-1.

Respectfully submitted,

Date: 10-9-07By: David C. Scherer, Ph.D.
Registration No. 56,993Date: 10-9-07By: Bret E. Field
Registration No. 37,620

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, Colorado 80537-0599

\\BFF-7\Programs\DOCUMENT\AGIL\201 (10010464-1)\10010464-1 (AGIL-201) Rrsp to FINAL OA dated 08-06-07.doc